EXPLORING DENTISTRY TEACHERS' PERCEPTIONS AND UNDERSTANDING OF THE TEACHING AND ASSESSMENT OF THE HPCSA CORE COMPETENCIES IN AN UNDERGRADUATE DENTISTRY CURRICULUM

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by

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DECLARATION

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

DEDICATION

I dedicate this research to my loving mother, Sarah Masike, who never stopped encouraging me to study further. I thank God for her and the support she provided throughout this MPhil journey. She would not end a telephone conversation without enquiring about my studies and progress of assignments, even on her last days on this earth while I was busy generating data for this study. She is definitely cheering me on from heaven now.

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SUMMARY

In response to global calls for the transformation of health professional education (Frenk et al., 2010; World Health Organisation, 2011), Competency-Based Medical Education (CBME) has emerged as a useful educational approach for equipping health professional graduates to meet the changing healthcare needs of the communities they serve. The Health Professions Council of South Africa (HPCSA) adopted the Canadian Medical Education Directions for Specialists (CanMEDS) competency framework (Royal College of Physicians and Surgeons of Canada, n.d.) in 2014, and contextually adapted it for undergraduate health professional education in South Africa (Medical and Dental Professions Board of the Health Professions Council of South Africa, 2014). Health Professions Education Institutions in South Africa are now required to incorporate the HPCSA core competencies into their curricula (Van Heerden, 2013). Sefako Makgatho Health Sciences University (SMU) has responded to this call and is currently reviewing curricula for all the undergraduate dental degree programmes (dentistry, oral hygiene and dental therapy) that are offered at the university. At present, undergraduate dental students at SMU are provided with a copy of the HPCSA core competencies document at the beginning of their studies. It is, however, not clear how the teachers in the undergraduate dental programmes at SMU understand and experience the teaching and assessment of the HPCSA core competencies. It is important that teachers are skilled to teach and assess the HPCSA core competencies in order to ensure that the competencies are effectively acquired by the graduates.

This study utilised a qualitative methodology within an interpretivist paradigm to explore dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies in undergraduate dentistry training programmes at SMU. Purposive sampling was employed to select a study sample of 10 participants. Sampling criteria included dentistry and educational qualifications, teaching experience, and being full- time teachers in the undergraduate dentistry programme at SMU within both the clinical and classroom contexts. Qualitative data were generated by means of face-to-face, semi-structured individual interviews, conducted by the researcher. Interviews were audio-recorded with the consent of the participants. Audio recordings were coded and thematically analysed by the researcher, guided by Braun and Clarke's (2006) six phases of thematic analysis.

The findings of this study indicate that participants had varying perceptions and understandings of the teaching and assessment of the HPCSA core competencies within the study context, and brought to the fore the various barriers and enablers teachers experienced in teaching and

assessing these competencies. This study highlighted the need for faculty development programmes focused on empowering dentistry teachers with the knowledge and skills to teach and assess all seven of the HPCSA core competencies, in order to adequately equip dentistry graduates to meet the healthcare needs of the patients and communities they will be serving.

OPSOMMING

In reaksie op wêreldwye oproepe vir die transformasie van gesondheidsberoepe (Frenk et al., 2010; Wêreldgesondheidsorganisasie, 2011), het Bevoegdheidsgebaseerde Mediese Onderrig (BGME) bekend geraak as 'n nuttige opvoedkundige benadering om professionele gegradueerdes toe te rus om in die veranderende gesondheidsorgbehoeftes van die gemeenskappe wat hulle bedien te voorsien. Die Suid-Afrika Raad vir Gesondheidsberoepe (HPCSA) het in 2014 die vaardigheidsraamwerk van die Kanadese Mediese Opvoedingsaanwysings vir Spesialiste (CanMEDS) (Royal College of Physicians and Surgeons of Canada, n.d) aangeneem en kontekstueel aangepas vir voorgraadse gesondheidsberoepe in Suid-Afrika (Mediese Tandheelkunde- en Beroepsraad van die Suid-Afrikaanse Raad vir Gesondheidsberoepe, 2014). Onderwysinstellings vir gesondheidsberoepe in Suid-Afrika moet nou die HPCSA se kernbevoegdhede by hul kurrikulums inwerk (Van Heerden, 2013). Sefako Makgatho Universiteit (SMU) het hierop gereageer en hersien tans kurrikulums vir al die voorgraadse tandheelkundige graadprogramme (tandheelkunde, mondhigiëne en tandheelkundige terapie) wat by die universiteit aangebied word. Tans word voorgraadse tandheelkundige studente aan SMU van 'n afskrif van die HPCSA kernbevoegdhede dokument voorsien. Dit is egter nie duidelik hoe die lektore, in die voorgraadse tandheelkundige programme aan SMU, die onderrig en assessering van die kernbevoegdhede van die HPCSA verstaan en ervaar nie. Dit is belangrik dat lektore vaardig moet wees in die onderrig en assessering van die HPCSA kernbevoegdhede, ten einde te verseker dat die vaardighede effektief deur die gegradueerdes aangeleer word.

Hierdie studie het 'n kwalitatiewe metodologie, binne 'n interpretatiewe paradigma, gebruik om lektore se persepsies en begrip van die onderrig en assessering van die HPCSA kernbevoegdhede in voorgraadse tandheelkundige opleidingsprogramme by SMU te verken. Doelgerigte steekproewe is gebruik om 10 deelnemers te kies. Steekproefkriteria sluit in tandheelkunde en opvoedkundige kwalifikasies, onderrigervaring, en voltydse lektore in die voorgraadse tandheelkundeprogram aan SMU, binne beide kliniese en klaskamer-konteks. Kwalitatiewe data is gegenereer deur middel van semigestruktureerde, indiwiduele onderhoude wat van aangesig-tot-aangesig deur die navorser uitgevoer is. Onderhoude is digitaal opgeneem met die toestemming van die deelnemers. Oudio-opnames is gekodeer en tematies ontleed deur die navorser, gelei deur Braun en Clarke (2006) se ses fases van tematiese analise.

Die bevindinge van hierdie studie het getoon dat deelnemers verskeie persepsies en begrip gehad het rakende die onderrig en assessering van die kernbevoegdhede van die HPCSA binne die studiekonteks, en het die verskillende struikelblokke en ondersteuningsfaktore geïdentifiseer wat lektore ondervind het om hierdie vaardighede te onderrig en te assesseer. Hierdie studie het die behoefte uitgelig aan fakulteitsontwikkelingsprogramme wat daarop fokus om tandheelkunde-onderwysers te bemagtig met die kennis en vaardighede om al sewe van die HPCSA kernkomponente te onderrig, ten einde tandheelkundige gegradueerdes voldoende toe te rus om te voorsien in die gesondheidsorgbehoeftes van die pasiënte en gemeenskappe wat hulle sal dien.

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ABBREVATIONS

CanMEDS	Canadian Medical Education Directions for Specialists
CBME	Competency-Based Medical Education
EPAs	Entrustable Professional Activities
ITER	In-training evaluation reports
HPCSA	Health Professions Council of South Africa
HREC	Health Research Ethics Committee
MDB	Medical and Dental Professions Board
MEDUNSA	Medical University of Southern Africa
OSCE	Objective Structural Clinical Examination
PBL	Problem Based Learning
RCPSC	Royal College of Physicians and Surgeons of Canada
SAMSS	Sub-Saharan African Medical School Study
SMU	Sefako Makgatho Health Sciences University
SMUREC	Sefako Makgatho Health Sciences University Research Ethics Committee
SOE	Structured Oral Examination
SOHS	School of Oral Health Sciences
UL	University of Limpopo
WHO	World Health Organisation

Chapter 1: ORIENTATION TO THE STUDY

1.1 INTRODUCTION

There has been global calls for Health Professions Education Institutions to reform curricula in the 21st century (Frenk et al., 2010; World Health Organisation, 2011) in order to produce graduates who will be responsive to the changing healthcare needs of individual patients and the communities they serve (Frank & Danoff, 2007).

A Competency-Based Medical Education (CBME) curriculum framework is useful in achieving this global goal as it considers the healthcare needs of communities to determine the outcomes that graduates should display (Harris, Snell, Talbolt & Harden, 2010). CBME is defined as "an outcome-based approach to the design, implementation, assessment and evaluation of medical education programs, using an organizing framework of competencies" (Frank et al., 2010, p.641). In addition, a competency framework can be defined as a systematic demonstration of a set of correlated competencies (Willet, 2012).

The Canadian Medical Education Directions for Specialists (CanMEDS) physician competency framework (Royal College of Physicians and Surgeons of Canada, n.d.) is one of the frameworks for learning outcomes of a competency-based approach. The CanMEDS framework was initially developed by the Royal College of Physicians and Surgeons of Canada (RCPSC) to support the progression of physicians' competence at postgraduate level (Frank, 2005). This competency framework addresses the competencies that go beyond the biomedical aspects of patient care to equip graduates with a range of competencies aimed at meeting the changing healthcare needs of the patients and communities they serve. The competency domains are organised around the seven roles of medical expert, communicator, collaborator, manager, health advocate, scholar, and professional (Frank, Snell, & Sherbino, 2015).

In order to respond to the changing healthcare needs of communities within the South African context, the Medical and Dental Professions Board (MDB) of the Health Professions Council of South Africa (HPCSA) adopted the CanMEDS competency framework (RCPSC, n.d.) in 2014. The HPCSA contextually adapted this framework for undergraduate health professional education in South Africa (MDB of the HPCSA, 2014).

Figure 1 HPCSA Core Competency Framework adapted from CanMEDS Physician Competency Framework, 2005 (MDB of the HPCSA 2014)

According to this framework (Figure 1), undergraduate students in Clinical Associate, Dentistry and Medical Teaching and Learning Programmes in South Africa are required to become proficient in the seven roles of healthcare practitioner, communicator, collaborator, leader and manager, health advocate, scholar and professional (MDB of the HPCSA, 2014). This competency framework further comprises key and enabling competencies for each competency domain that serve as guidelines for the training of undergraduate health professionals in the South African context (Van Heerden, 2013)

Table 1. Seven HPCSA core competencies and their explanations as depicted in the MDB Core Competencies document	
1	***Healthcare Practitioner*** As *healthcare practitioners*, healthcare professionals integrate all of the graduate attribute roles, applying profession-specific knowledge, clinical skills and professional attitudes in their provision of patient/client-centred care. The *healthcare practitioner* is the central role in the framework of graduate attributes. (p2)
2	***Communicator*** As *communicators*, healthcare professionals effectively facilitate the carer-patient relationship and the dynamic exchanges that occur before, during and after interventions. (p5)
3	***Collaborator*** As *collaborators*, healthcare professionals work effectively within a team to achieve optimal patient care. (p7)
4	***Leader and Manager*** As *leaders and managers*, healthcare practitioners are integral participants in healthcare organisations, organising sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the healthcare system.(p8)
5	***Health Advocate*** As *health advocates*, healthcare professionals responsibly use their expertise and influence to advance the health and well-being of individuals, communities and populations. (p10)
6	***Scholar*** As *scholars*, healthcare professionals demonstrate a lifelong commitment to reflective learning as well as the creation, dissemination, application and translation of knowledge. (p11)
7	***Professional*** As *professionals*, healthcare professionals are committed to ensure the health and well-being of individuals and communities through ethical practice, profession-led self-regulation and high personal standards of behavior. (p13)

HPCSA Core competency framework (MDB of the HPCSA, 2014)

This competency framework further comprises key and enabling competencies for each competency domain that serve as guidelines for the training of undergraduate health professionals in the South African context (Van Heerden, 2013).

1.2 CONTEXT OF THE STUDY

Health Professions Education Institutions in South Africa are required to incorporate the HPCSA core competencies into their curricula so that students are adequately prepared during their education and training to respond to the changing healthcare needs of their patients and the communities they serve (Van Heerden, 2013; MDB of the HPCSA, 2014). The School of Oral Health Sciences (SOHS) at Sefako Makgatho Health Sciences University (SMU) has responded to this call and is currently reviewing curricula for all the undergraduate dental degree programmes (dentistry, oral hygiene, and dental therapy) that are offered at SMU.

The study was carried out at the SOHS at SMU in Pretoria, Gauteng Province, South Africa. SMU was established in 2014 after the Minister of Higher Education promulgated the demerging of Polokwane-Mankweng and the Medical University of Southern Africa (MEDUNSA) training platforms of the University of Limpopo (UL). The vision of SMU is to be the benchmark institution that provides holistic health sciences education that meets the health needs of the individual, the family, the community, and the population. Moreover, in keeping with its mission statement, SMU aims to deliver a team of healthcare professionals who possess the transformative leadership competency to address the healthcare needs of the individual, the family, the community, and the population (SMU, 2014).

SMU offers both undergraduate and postgraduate programmes in its five schools, which include the School of Medicine, School of Health Care Sciences, School of Pharmacy, School of Science and Technology, and the School of Oral Health Sciences (SOHS).

The SOHS is currently accredited to offer three undergraduate dentistry degree programmes (Table 1).

Table 2: Undergraduate Degree Programmes offered at SOHS

Programme	**Abbreviation/Qualification**	**Duration**
Bachelor of Oral Hygiene	BOral Hyg/ BOH	Three years
Bachelor of Dental Therapy	BDent Ther/ BDT	Three years
Bachelor of Dental Surgery	BDS	Five years

There are approximately 127 full-time and part-time teachers with dentistry qualifications, who teach in the three programmes. Most of these teachers have a Bachelor of Dental Surgery degree and teach in all three undergraduate dental programmes. Additional training in basic sciences and certain health sciences disciplines is provided by a small number of non-dental teachers from other schools at SMU such as the School of Science and Technology, School of Pharmacy and School of Medicine. This training is mostly presented at junior levels of the undergraduate dental programmes. The students undertake classroom and clinical training. Most of their dental clinical training takes place at the SOHS training hospital, commonly known as Medunsa Oral Healthcare Centre. Teachers with dentistry qualifications (dentists, dental therapists and oral hygienists) provide clinical training at this setting. Further workplace-based training is provided by SOHS dentistry teachers at nearby rural township.

At present, undergraduate dental students at SMU are provided with the HPCSA core competencies document (MDB of the HPCSA, 2014) at the beginning of their studies. However, undergraduate dentistry teachers have not yet received formal training on the teaching and assessment of the HPCSA core competencies in the undergraduate dental programmes at SMU. It is important that dentistry teachers are skilled to teach and assess the HPCSA core competencies in order to ensure that these competencies are mastered by students at the time of graduation.

1.3. PROBLEM STATEMENT AND RATIONALE

According to the HPCSA core competency framework, all undergraduate healthcare professionals, including dentistry students, should be adequately prepared during their education and training to respond to the changing healthcare needs of individual patients as well as the communities they serve (Van Heerden, 2013; MDB of the HPCSA, 2014). Although the key and enabling competencies of the HPCSA core competency framework (MDB of the HPCSA, 2014) clearly delineate the attributes that competent healthcare practitioners should demonstrate (Manillal & Rowe, 2016), there are limited guidelines in place to assist teachers in the health professions on the teaching and assessment of these core competencies.

As a teacher in the exit level of the undergraduate dentistry programme at SMU, the researcher noticed that the teaching and assessment of the HPCSA core competencies were not yet fully effected at the final phase of the programme. On a personal level, the researcher felt unprepared to teach and assess the HPCSA core competencies. This stimulated her interest in enquiring about other dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies.

Although undergraduate dental students at SMU are provided with the HPCSA core competencies framework document (MDB of the HPCSA, 2014), it was not clear how dentistry teachers at SMU currently perceive and understand the teaching and assessment of these core competencies. It is crucial that teachers are skilled to teach and assess the HPCSA core competencies in order to ensure that the competencies are effectively acquired by the graduates.

Currently there is a paucity of literature on the teaching and assessment of HPCSA core competencies in undergraduate dentistry programmes in the South African context. From the reviewed literature, the researcher also determined that the published studies on the CanMEDS competency framework globally are mostly limited to physicians at postgraduate level. Therefore more studies are required that will specifically explore the teaching and assessment of the HPCSA core competencies (as a contextually adapted version of the CanMEDS competency framework) in undergraduate dentistry training in the South African context.

It is against this backdrop that the study aimed to explore dentistry teachers' perceptions and understanding about the teaching and assessment of the HPCSA core competencies in undergraduate dentistry programmes at SMU. It is envisaged that the findings may be used to make recommendations regarding possible staff development initiatives related to the teaching

and assessment of these competencies, with the aim to empower teachers to optimally prepare undergraduate dental students to meet the healthcare needs of the patients and communities they will be serving after graduation.

1.4 RESEARCH QUESTIONS

1.4.1 Primary Question

The primary research question addressed by this study was “How do dentistry teachers perceive and understand the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?”

1.4.3 Secondary Question

The secondary research question was formulated as follows: “What are the enablers and barriers to the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?”

1.5 AIMS AND OBJECTIVES

This study aimed to explore dentistry teachers’ perceptions and understanding regarding the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU. The study sought to determine whether there was a need for staff development on the teaching and assessment of HPCSA core competencies, with a view to empower teachers to prepare undergraduate dental students to meet the healthcare needs of the patients and communities they will be serving.

Specific study objectives included:

a) To explore and describe the perceptions and understanding of dentistry teachers about the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU

b) To determine the barriers and enablers that undergraduate dentistry teachers at SMU encounter with the teaching and assessment of the HPCSA competencies in their respective modules

c) To make possible recommendations regarding staff development at SMU related to the teaching and assessment of the HPCSA core competencies.

1.6 METHODOLOGY

A qualitative methodology within an interpretivist paradigm was used since the purpose of this study was to gain insight into participations' views and experiences of teaching and assessment in a specific context, as well as of the enablers and barriers to teaching and assessment within this context. The target population for this study consisted of 127 full-time and part-time dentistry teachers who were teaching across the undergraduate dentistry programme at SMU at the time when the study commenced. Purposive sampling was used to select a study sample of 10 participants. Sampling criteria included dentistry and educational qualifications, teaching experiences, and being full-time teachers in the undergraduate dentistry programme at SMU within both the clinical and classroom contexts.

Qualitative data were generated by means of face-to-face, semi-structured individual interviews conducted by the researcher. Interviews were audio-recorded with the consent of the participants and transcribed by an independent professional transcriber. Data were coded and thematically analysed by the researcher, guided by Braun and Clarke's (2006) six phases of thematic analysis.

1.7 ETHICAL CONSIDERATIONS

The study was conducted according to the ethical guidelines and principles of the International Declaration of Helsinki. The research proposal was submitted for ethical approval to the Health Research Ethics Committee (HREC) of Stellenbosch University (Project ID: 6680, HREC Reference Number: S18/05/111) and the research ethics committee at SMU (SMUREC). Participation was voluntary and written informed consent was obtained from participants from the outset. Data were stored on a password-protected computer that was accessible only by the researcher. Confidentiality was maintained throughout the research process. Interviews were conducted at a mutually agreed upon time and venue that enabled privacy and confidentiality. Participants' identities were protected by assigning a matching code number to each participant so that no data could be directly linked to individual participants in the final research report (Brink, Van der Walt, & Van Rensburg, 2016).

1.8. OUTLINE OF THE STUDY

This **first chapter** provided a brief orientation to this study, focusing on the rationale for the study, the study context, and the research questions that informed the study, as well as the study aims and objectives. It also provided an overview of the methodology and ethical considerations that were taken into account. These aspects will be further explored in subsequent chapters.

Chapter two will explore the literature on CBME, as well as the CanMEDS competency framework and the HPCSA core competency framework. Theoretical perspectives that inform the study are also discussed.

Chapter three focuses on the study design, methodology, data generation and analysis, as well as the qualitative quality criteria and ethical considerations. **Chapter four** provides an overview of the findings of this study, while **chapter five** offers a detailed discussion of the findings in relation to the literature. **Chapter six** concludes the report and addresses study limitations and offers recommendations**.**

Chapter 2: LITERATURE REVIEW AND THEORETICAL PERSPECTIVES

2.1 INTRODUCTION

This chapter explores the literature related to CBME, the CanMEDS competency framework and the HPCSA core competency framework. In addition, theoretical perspectives that may provide a useful lens for exploring dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies are explored.

2.2 BACKGROUND

The World Health Organisation (WHO) has a global mandate to design guidelines that will assist countries to synchronise the training of health professionals with the healthcare needs of communities (WHO, 2011). Regulatory bodies, training institutions and health systems are among the important role players needed to reform health professional education, while the healthcare needs of individuals and communities are the drivers for the transformative scale up of health professional education (WHO, 2011).

The seminal Lancet Report (Frenk et al., 2010) highlighted major disparities between the education of healthcare professionals and the global changing healthcare needs of the communities they serve. Frenk et al. (2010) assert that, since the publication of the Flexner report in 1910, which promoted the advancement of scientific knowledge within medical curricula, training institutions were unsuccessful in keeping up with the global changing healthcare needs of individuals and communities. They also failed to train students who can work effectively in teams and act as change agents (Frenk et al., 2010). These inadequacies in competencies steered a global call for all the Health Professions Education Institutions to focus on core competencies that are aligned with the global changing healthcare needs of individual patients and the communities they serve (Frenk et al., 2010).

Calls for competency-based curricula in health professions education date back more than six decades (Grant, 1979; Carraccio, Wolfsthal, Englander, Ferentz, & Martin, 2002). In response to the recent calls for the transformation of health professional education, a renewed focus was placed on CBME as a useful approach to adequately prepare graduates for their future roles. In a CBME approach, the competencies that the graduate should demonstrate are typically determined by the healthcare needs of the patients and communities served, and are reflected in the curriculum design (Frank et al., 2010; Gruppen, Mangrulkar and Kolars, 2012). Several countries have developed competency frameworks that delineate the competencies that

healthcare professionals should demonstrate (Van der Lee et al., 2013). The CanMEDS competency framework (RCPSC, n.d.) has been widely adopted by many countries for the development of both undergraduate and postgraduate health professions education programmes (Van der Lee et al., 2013).

2.3 GLOBAL EXPERIENCES

Globally, positive results were reported following the implementation of a competency-based approach to health professional education. An example is a project that was undertaken by the University of Western Ontario in the rural settings of Canada, which reported on the successful preparation of physicians to be accountable to the healthcare needs of the communities through the implementation of the CanMEDS competency framework (Rourke & Frank, 2005).

2.4 EXPERIENCES IN SUB-SAHARAN AFRICA

Findings of the sub-Saharan African Medical School Study (SAMSS) indicated that various countries in sub-Saharan Africa are prioritising the scale up of health professional education in order to strengthen health systems (Mullan et al., 2011). Moreover, comprehension of the CanMEDS framework in sub-Saharan African countries has informed the effective development of core competency frameworks as an approach to transform health professional education at health professions institutions in both Uganda (Kiguli et al., 2014; Kiguli-Malwandi et al., 2014) and Nigeria (Kiguli et al., 2014). It is, however, important to be cognisant of the fact that more work is still needed to facilitate the integration of core competencies with the needs of communities and populations in the sub-Saharan African context. Dudley, Young, Rohwer (2015, p.81) cautions that health professions education curricula in many parts of sub-Saharan African are still informed by the “production of specialists skills and global competitiveness of graduates rather than local population needs”

In South Africa, the Walter Sisulu Medical School utilised the healthcare needs of the nearby communities to inform the training of healthcare professionals. It is reported that, in 2011, approximately 70% of the graduate doctors from the school continued to serve in the rural communities, resulting in a significant improvement in the healthcare of the communities (World Health Organisation, 2011). Ayo-Yusuf, Motloba and Rantao (2015) view the adoption of the CanMEDS competency framework as an ideal strategy to increase the scope of training of dental students to promote their active involvement in the improvement of the general healthcare of the communities. Chen, Page, McMillan, Lyons and Gibson (2015) argue that training that fails to expose dental students to the healthcare needs of the communities can result in producing graduates who are not accountable to the communities they serve.

2.5 TEACHING AND ASSESSMENT OF THE CANMEDS CORE COMPETENCIES

Health professional education institutions and regulating bodies are accountable to the communities they serve. It is therefore important that health professional education institutions provide sufficient evidence to communities and relevant stakeholders that graduates have achieved all the required competencies (Schumway & Harden, 2003). Ten Cate (2013) argues that it is essential for patients to be able to trust their health care providers.

Assessment plays an integral part in health professional education, as a means to reassure communities and stakeholders that graduates are competent to respond effectively to their changing health care needs (Schumway & Harden, 2003). However, it is well known that teachers encounter many challenges regarding the alignment of teaching, learning and assessment, as well as with making judgments about the performances of students (Ten Cate, Snell and Carraccio, 2010).

Schumway and Harden (2003) argue that in order to see improvements in the implementation of a new curriculum, it is crucial that teachers change their assessment approaches. Furthermore, Caccia, Najkajima and Kent (2015) argue that continuous assessments, which focus on the progression of students, are key to optimal teaching and learning within a CBME curriculum. Lockyer et al. (2017) concur that timely continuous assessments with comprehensive assessments will ensure continuous progression of students. Students use the assessment outputs to determine their progress through the curriculum (Schumway & Harden, 2003).

As stated in the problem statement in chapter one, the researcher determined that published studies on the CanMEDS competency framework globally are generally limited to postgraduate programmes. This can also be due to the origin of the CanMEDS. Therefore, reviewed literature in the context of this study is predominantly based on studies done in postgraduate programmes.

Studies reveal that students in various disciplines of postgraduate training, prefer that teaching and assessment of the CanMEDS core competencies should be made specific to their specialties (Stutsky, Singer & Renaud, 2012; Van der Lee et al., 2013). However, teachers were experiencing difficulties regarding the teaching and assessment of these core competencies (Van der Lee et al., 2013). Literature revealed that some of the competencies such as health advocate, manager and professional core competencies reported to be difficult to teach (Stafford, Sedlak, Fok & Wong., 2010).

Teaching and learning in CBME is flexible and should ideally facilitate the active construction of knowledge and meaning for students (Caccia, Nakajima & Kent, 2015). Students should also be encouraged to become actively involved in their learning and assessment (Lockyer et al., 2017). Teachers are therefore faced with the challenge of using appropriate teaching and assessment methods in order to facilitate learning. However, there is a paucity of literature focusing on the teaching methods and incorporation of the seven CanMEDS core competencies into curricula (Whitehead et al., 2011). Moreover, Jefferies, Simmons, Ng and Skidmore (2011) argue that the ideal teaching and assessment methods to teach and assess the CanMEDS core competencies are not yet known, despite the directive to teach and assess these competencies. Furthermore, Harris et al. (2017) assert that the move to CBME has exposed the shortcomings of current assessment methods and the need design more innovative methods.

A new skill or behaviour can be learned by observing others (Bandura, as cited in Caccia et al., 2015, p350) and through role modelling that particular behaviour. Role modelling has been described by various authors as the preferred method in teaching and learning the CanMEDS core competencies (Verma, Flynn, & Seguin, 2005; Berger et al., 2012; Turner, White, Poth, & Rogers, 2012; Côté & Laughrea, 2014). However, Verma et al. (2005) and Chou, Cole, McLaughlin and Lockyer (2008) argue that role modelling on its own is not adequate to teach and learn the CanMEDS core competencies. The success of learning depends on the relationship and balance between the modelled behaviour, the learning atmosphere and the qualities of the student (Caccia et al., 2015). Additionally, Côté and Laughrea (2014) agree that the success of role modelling as CanMEDS teaching method depends on the ability of the teachers to perform the roles.

A recent study revealed teaching as knowledge, teaching through experience or exposure, and role modelling as some teaching methods which teachers employed to teach the CanMEDS core competencies (Paradis et al., 2018). However, there were gaps identified with the manner in which teachers executed these methods, this was attributed to lack of staff development in CanMEDS core competencies (Paradis et al., 2018).

The RCPSC published the “CanMEDS Assessment Tools Handbook” (Bandiera, Sherbino and Frank, 2006) in order to provide teachers with relevant information that will assist them to choose the appropriate methods to assess specific core competencies. Bandiera et al. (2006) assert that some assessment methods are more effective than others in assessing the CanMEDS core competencies. Sherbino and Bandiera (2011) concur that there is no need to assess all the core competencies simultaneously, since the chosen method may not be appropriate for other core

competencies. However, Ten Cate et al. (2010) argue that the seven CanMEDS core competencies are interconnected as displayed on their diagram, therefore, these core competencies should be collectively taught and assessed. Ten Cate et al. (2010) suggest integrated teaching and assessment method such as Entrustable Professional Activities (EPAs) for teaching and assessing all the seven core competencies in daily practice.

EPAs are “units of professional practice, defined as tasks or responsibilities to be entrusted to the unsupervised execution by a trainee once he or she has attained sufficient specific competence” (Ten Cate, 2013, p157). EPAs are important in CBME because they help teachers to make competency-based decisions about their students (Ten Cate, 2013). Through entrustment decisions, teachers acknowledge that students can perform tasks without or with minimum supervision (Ten Cate, 2013).

Other assessment methods reported to be effective in assessing most of the CanMEDS core competencies include and not limited to Objective Structured Clinical Examinations (OSCE), Structured Oral Examinations (SOE) and in-training evaluation reports (ITER) (Dwyer et al., 2014). OSCE is a structured, standardised clinical performance assessment method that involves multiple chronologically arranged stations (Downing and Yudkowsky, 2009) and is reported to be the preferred method for the assessment of all CanMEDS core competencies (Dwyer et al., 2014). SOE refers to structured oral assessment method where the assessors use predetermined questions; acceptable answers and marking rubric to assess the students (Jefferies et al., 2011). Due to the nature of SOE, the method is deemed useful in assessing the content aspect of the CanMEDS core competencies (Jefferies et al., 2011). However, this assessment method is inadequate to assess some core competencies where performance of the role is required (Jefferies et al., 2011). Therefore, Jefferies et al. (2011) suggest combining the SOE method with other performance assessment methods.

Acknowledging the complexity of CBME, Holmboe et al. (2011) suggest that extensive assessments will be required in order to verify that the student is competent to graduate. Therefore, it is prudent that the teachers are competent in designing such assessments. Lockyer et al. (2017), argue that it is important to improve the competence of teachers in assessment. Puddester, MacDonald, Clements, Gaffney and Wiesenfeld (2015) suggest that teachers should receive effective training on the intrinsic CanMEDS core competencies before they can start effecting the assessment of these core competencies.

2.6 STAFF DEVELOPMENT

As discussed in chapter one and the literature background in this chapter, transformative scale up of health professional education refers to urgent global calls for health professional education to reform curricula in order to meet the health needs of patients and their communities, through production of graduates who will be able to address these needs (Frenk et al., 2010; World Health Organisation, 2011). Teachers play an integral part in the transformative scale up of health professional education institutions because of their role in preparing graduates to respond to the changing health care needs of their patients and the communities they serve.

It is well-known that teachers in health professional education institutions are essentially trained to be competent in clinical skills and the delivery of health care, but have not necessarily received formal training in teaching and assessment of students (Hedge, 2013; Ross 2016; Steinert et al., 2016). Hedge (2013) argues that transformation in health care education can be effectively facilitated through staff development initiatives that are mainly focused on changing those involved in teaching.

Staff development is defined by McLean, Cilliers and Van Wyk (2008) as the alignment of training of teachers with the mission and vision statements of the Institution that aims to address the changing health care needs of the communities they serve. This form of training is at the heart of CBME and the CanMEDS core competency framework (Frank et al., 2010; Gruppen et al.,2012; Royal College of Physicians and Surgeons of Canada, n.d.).

Frank and Danoff (2007) argue that staff development is crucial to adequately prepare teachers for the implementation of a competency-based educational approach and to ensure that they become familiar with new approaches to teaching, learning and assessment that forms part of CBME. It is reported that extensive staff development initiatives such as workshops and presentations-on-demand, followed by staff support, were crucial in the early adoption and implementation process of the CanMEDS core competency roles (Dath, Iobst & for the International CBME Collaborators, 2010).

Based on their study findings (Puddester et al., 2015) assert that staff development that explains the intrinsic CanMEDS core competencies is crucial in helping the teachers to understand the teaching and assessment of the CanMEDS core competencies.

2.7 THEORETICAL PERSPECTIVES

Theoretical perspectives form the basis upon which assumptions about research are built and influence how the study will be conducted, what the researcher's role will be, and what types of knowledge will be produced (Illing, 2014).

As a measure of quality in teaching, universities are expected to demonstrate constructive alignment of their programmes (Biggs, 2003; Biggs, 2014). This notion of constructive alignment involves the alignment of teaching/learning tasks and assessment activities with the intended learning outcomes. The design of assessment and learning tasks are focused on helping students to achieve the learning outcomes. Biggs (2012) argues that, when considering the notion of constructive alignment, it is important to focus on what both the teacher and student do. The author argues that the *constructive aspect* of constructive alignment focuses on what the student does, which is to construct knowledge and understanding through the learning activities whereas the focus of the *alignment aspect* is on what the teacher does, which is to provide a supportive learning environment (Biggs, 2012). Moreover, Biggs (2012) maintains that a deep approach to learning will be achieved when the teachers are explicit about what students should learn and then integrate these learning outcomes with teaching, learning activities, and assessment activities. Teachers are therefore faced with the challenge of ensuring the alignment of teaching, learning, and assessments with the learning outcomes.

Biggs (2012) posits that a theory of learning can be used to assist teachers to reflect on their teaching in order to understand what they are doing and to improve their teaching. The author further suggests that constructivism may be an ideal learning theory to assist the teachers with constructing knowledge from their teaching experiences through the practice of regular reflection (Biggs, 2012). Constructivists view learning as an active process whereby individuals construct knowledge and understanding on the foundations of what they already know (Vygotsky, 1997). Knowles (1980) proposes that adults, unlike children, have life experience, which can be a source of learning from and with each other (Kaufman & Mann, 2014).

Illing (2014) concurs that knowledge and meaning are socially constructed from existing knowledge. During this study, the researcher attempted to provide an environment that would allow the participants to share their perceptions and understanding in such a way that it would allow the researcher to co-construct new knowledge through her interactions with them.

According to Kolb's experiential learning theory (1984), concrete experience is the foundation for learning to occur. According to this experiential learning theory, effective learning happens when

an individual progresses through a four-stage cycle. The stages include (1) having a concrete experience; (2) observing and reflecting on that experience; (3) forming abstract concepts (analysis) and generalisations (conclusions); and (4) using those interpretations to test hypotheses in future situations that, in turn, may result in new actions, experiences and competencies (Yardley, Teunissen, & Dornan, 2012).

Through reflection, individuals can share their own perceptions and subsequently improve their common and individual learning (Kaufman & Mann, 2014). In the context of this study, the researcher encouraged individuals to think back on their experiences (Kaufman & Mann, 2014) of teaching and assessing the HPCSA core competencies through the iterative process described by Schön (1987) as reflection-on-action. The researcher explored the perceptions of individuals who teach and assess the HPCSA core competencies across the undergraduate dentistry programme at SMU.

As stated previously, the HPCSA core competencies were adopted in South Africa in order to address the changing healthcare needs of patients and the communities. According to Knowles' adult learning theory (1988), adults prefer learning that is meaningful and relevant to their real life encounters. They need to understand how the new knowledge will benefit them. Guided by the assumptions of adult learning theory, the researcher considered the fact that dentistry teachers as adult learners would appreciate learning that is relevant (Kaufmann, 2003) to their daily teaching demands. Taylor and Hamdy (2013) suggest a link between adult learning and experiential learning since teachers are expected to create and plan experiences in order to enhance their learning. The researcher assumed that teachers are lifelong learners (Knowles, 1988) who are willing to learn new knowledge and become conversant to teach and assess the HPCSA core competencies. Furthermore, undergraduate dentistry students are also adult learners who are trained to become accountable to the patients and the communities they serve.

However, based on various challenges reported in the literature related to the incorporation of the CanMEDS competency framework into the curriculum (Van der Lee et al., 2013), the researcher anticipated that dentistry teachers at SMU may experience challenges with both learning and incorporating the inherent HPCSA core competencies into the current dentistry curriculum.

It is within this context that the study was conducted to explore dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies in an

undergraduate dental programme at SMU, and to determine possible barriers and enablers related to the teaching and assessment of these competencies.

2.8. CONCLUSION

The aim of this chapter was to explore the literature related to CBME, the CanMEDS competency framework and the HPCSA core competency framework, as well as theoretical perspectives that may inform our understanding of dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies. The background information on the transformative scale up of health professional education was discussed. In addition, the global and sub-Saharan overview on the prioritisation of scaling-up health professional education in order to strengthen health systems was discussed. The role of teachers with regards to improving teaching-learning and assessment of CBME was discussed. Staff development initiatives were recognised as crucial in the adoption and implementation of CBME. Lastly, the learning theories that informed this study and study methodology were discussed in detail. The next chapter focuses on the study design and methodology. Data generation and analysis methods, quality measures that were taken into account, as well as the ethical considerations will be discussed.

Chapter 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The methodology of this study was guided by the following research questions and objectives:

3.1.1 Primary Research Question

How do dentistry teachers perceive and understand the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?

3.1.2 Secondary Research Question

What are the enablers and barriers to the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?

3.1.3 Aims and Objectives

The overarching **aim** of this study was to explore the perceptions and understanding of dentistry teachers regarding the teaching and assessment of the HPCSA core competencies in an undergraduate dentistry programme at SMU, with a view to determine whether there is a need for staff development on the teaching and assessment of the HPCSA core competencies.

The specific **objectives** of this study were to

a) Explore and describe the perceptions and understanding of dentistry teachers about the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU

b) Determine the barriers and enablers that undergraduate dentistry teachers at SMU encounter with the teaching and assessment of the HPCSA core competencies in their respective modules

c) Make possible recommendations regarding staff development at SMU related to the teaching and assessment of the HPCSA core competencies.

3.2 METHODOLOGY

3.2.1 Study Design

An exploratory study design was selected since this study aimed to explore insiders' views (Brink et al., 2016) on teaching and assessment within a specific context. The study was conducted within a qualitative, interpretive methodological paradigm in order to assist the researcher to understand the reality, meaning and perceptions of the study participants through social interaction with the participants (Tavakol & Sandars, 2014; Brink et al., 2016).

3.2.2 Study Setting, Study Population and Sampling

The study was conducted at the SOHS at SMU in Pretoria, South Africa.

The target population for this study comprised one-hundred-and-twenty-seven (n=127) full-time and part-time dentistry teachers who teach all the undergraduate dental programme at SMU. Full-time teachers were selected for the study on the basis of their availability, and researcher's assumption that they are allocated more time for teaching and assessment in undergraduate curriculum as compared to part- time teachers. Moreover, some part-time clinical teachers are only involved with clinical supervision of students and not assessments.

A sample of ten (n=10) participants were purposively selected (Brink et al., 2016) to participate in this study, however, there were more than ten participants who were eligible to participate in this study. The sample was purposively selected on the basis that teachers were engaged with the teaching and assessment of undergraduate dentistry students in both the classroom and clinical contexts, and would therefore be best suited to share their perspectives on the teaching and assessment of the HPCSA core competencies in various contexts. Participants were further required to be in possession of a dentistry qualification and have undergraduate teaching experience of more than three years. These two pointers (qualification and teaching experience) were essential for this study as the HPCSA core competencies framework was adapted in South Africa four years ago. It was assumed that participants who met these criteria would be able to provide rich data on their perceptions of the HPCSA core competencies in the context of undergraduate dentistry education. Purposive sampling entails selecting participants with similar attributes and who have the ability to provide strong, pertinent and distinct data that is related to the research question (Tong, Sainsbury, & Craig, 2007). For the purpose of this study, the following sampling criteria were applied:

- Participants were full-time teachers at SMU, teaching in both the clinical and classroom environments
- Participants were teaching on the undergraduate dental programme at SMU
- Participants had a qualification in dentistry that would enable them to provide rich data on their perceptions of the HPCSA core competencies in the context of dentistry
- Participants had teaching experience of three years or longer
- Participants with and without additional teaching qualifications were selected to participate in the study as it was assumed that participants with a teaching qualification may have different experiences of teaching and assessing the HPCSA core competencies than those without a teaching qualification

The researcher initially informed the selected participants about the study by approaching them face-to-face individually once ethical approval was obtained from the research ethics committees of Stellenbosch University (HREC) and Sefako Makgatho Health Sciences University (SMUREC). A detailed email inviting these individuals to participate in the study was subsequently sent to them. Participants were further made aware of the fact that their participation would be voluntary and that they would be free to withdraw from the study at any stage without any negative consequences. Ten (n=10) participants agreed to participate in the study. Written informed consent was obtained from the participants prior to interview sessions (see Appendix A).

3.2.3 Data Generation

Qualitative data generation took place between 31 August 2018 and 11 October 2018 by means of individual, semi-structured interviews. The interviews were conducted during normal working hours at SMU, in a private room at a time that was convenient for each research participant. Interviews lasted approximately 30 minutes and were conducted in English.

Interviews are described as a type of self-reporting data generation instrument used to pose questions to the people concerned in the study (Brink et al., 2016). Approximately 10-20 individual interviews are generally considered an ideal number for obtaining valuable information from research participants while achieving data saturation (Starks & Trinidad, 2007; Hanson, Balmer, & Giardino, 2011). Paradis, O'Brien, Nimmon, Bandiera, and Martimianakis (2016) recommend the use of interviews in recording the perceptions and responses of individuals to specific situations. The interview method, with 10 selected participants, was therefore considered as ideal for this study, as it allowed the researcher to explore the perceptions and understanding of dentistry teachers about the teaching and assessment of the HPCSA core competencies within a specific context. Data was generated until data saturation was reached. Data saturation is

reached when no new additional information emerge that provide additional insight and when more coding is not necessary (Fusch & Ness, 2015).

Semi-structured interviews are qualitative research instruments that require conducting intensive individual interviews using a certain number of specific open-ended and closed questions as an outline, while allowing the interviewer to ask more probing questions (Brink et al., 2016). The purpose of the semi-structured interview is to explore the perspectives of the research participants about a specific concept or condition (Boyce & Neale, 2006). Since this study focused on the perceptions and understanding of dentistry teachers about the teaching and assessment of HPCSA core competencies, the researcher used an interview guide (Appendix B), guided by a series of predetermined open-ended questions that afforded participants the liberty to guide the conversation. The development of the questions was guided by the literature and the study objectives. The researcher clarified questions that study participants seemed to find difficult to understand. This is one of the strengths of semi-structured interviews (Brink et al., 2016).

A possible limitation of the semi-structured interview method is that the research participants may feel uncomfortable about recording their responses (Brink et al., 2016). This limitation was applicable to this study, since the researcher was known to the study participants. The researcher therefore reassured study participants about confidentiality upon recruitment and during interviews.

Interviews were audio-recorded and transcribed verbatim with the written permission of each participant. Confidentiality was maintained by conducting interviews in a private room and by protecting the identity of participants. The identities of participants were protected by assigning a matching code number to each participant so that data could not be linked to individual participants in any of the research reports (Brink et al., 2016). Audio files were shared with a professional transcriber who is not employed at SMU. A copy of the transcript was sent to the relevant study participants for member checking. The audio recordings and the transcribed data are currently stored on a password-protected computer that is only accessible to the researcher and will be deleted once the research audit is complete.

3.2.4 Data Analysis

Qualitative data analysis is described as an “ongoing process of reading, reflecting on and questioning the meaning of data as they are collected” (Ng, Lingard, & Kennedy, 2014, p.377). The responses of dentistry teachers about the teaching and assessment of the HPCSA core competencies were qualitatively coded and thematically analysed. Vaismoradi, Turunen and

Bondas (2013) describe thematic analysis as an independent, descriptive and reliable qualitative method that the researchers should be familiar with when analysing data in a qualitative study. The process of thematic analysis was guided by Braun and Clarke's (2006) six phases of thematic analysis.

Braun and Clarke (2006, p. 79) define thematic analysis as "a method for identifying, analysing and reporting themes within data". Table 2 outlines the six phases of Braun and Clarke's (2006) thematic analysis as applied to this study.

Table 2: Six phases of thematic analysis (Adapted from Braun & Clarke, 2006, p. 87)

Phase	**Description of the process**
1. Familiarisation with the data	Audio recordings were transcribed by a professional transcriber. Member checking was employed. The researcher immersed herself in the transcribed data by iteratively reading and re-reading texts, checking transcripts against recorded audio and noting initial ideas.
2. Generating initial codes	Analysis was done by hand and on word document. During this phase, the researcher coded interesting features of data and collated data that were appropriate to each code. The researcher based her coding on the study objectives.
3. Searching for themes	The researcher collated codes into potential themes.
4. Reviewing themes	The researcher then checked that the themes related appropriately to the codes and generated a thematic map.
5. Defining and naming themes	The researcher continued to analyse data in order to refine the specifics of each theme and to generate clear definitions and names for each theme.
6. Producing the report	Analysis of the data was finalised, relating the analysis back to the research question and literature. The researcher concluded the process by producing the research report.

Data generation and data analysis were guided by the theoretical perspectives discussed in chapter two.

3.2.5 Data Rigour

Quality principles of research, namely the truth value of evidence, applicability of evidence, consistency, and neutrality (Frambach, Van der Vleuten, & Durning, 2013) were used to ensure rigour throughout the research process. Quality criteria described by Lincoln and Guba (1985) include credibility, transferability, dependability, and confirmability. These were applied to the respective quality principles to strengthen the rigour of the study.

3.2.5.1. Truth value of evidence

Credibility refers to the degree to which the results of the study are trustworthy to others (Frambach et al., 2013). The researcher maintained credibility by providing a detailed description of HPCSA core competencies and CBME in chapter one; by asking the study participants to verify the accuracy of the interpretation of their own words (member checking) and by providing detailed description of the context of the teachers in dentistry programmes (chapter one; context of the study). Triangulation refers to using multiple methods to collect and interpret data (Brink et al., 2016). The researcher achieved triangulation by using observation notes taken during interview and reflective commentary. The researcher wrote observation notes during the interview to record non-verbal communication that could not be audio recorded. Reflective commentary refers to the researcher's reflections and evaluations through the research process (Shenton, 2004).

Another aspect considered to strengthen trustworthiness of this study was the researcher's declaration of her insider position as a teacher at SMU. As a primary investigator, the researcher is a full-time member of academic staff at SMU and Ethical Practice Management module coordinator for second year BOH and BDT Programmes. She teaches in the same school (SOHS) with study participants and works within the same department with some of the participants. She teaches practice management topics in a classroom setting to students at the second and third level of both BOH and BDT programmes and fourth level of BDS programme. She is also responsible for assessments in this module. The researcher is mostly involved with clinical training (teaching and assessment) of final year BDS students. However, she occasionally provide clinical training to final year BOH and BDT students, third and fourth year BDS students.

3.2.5.2. Applicability of evidence to multiple practical settings

Transferability is the degree to which the findings of the research can be employed in different locations (Frambach et al., 2013). The researcher aimed to promote transferability by providing a detailed thick description of the study findings within the context of existing literature in such a

manner that others will be able to determine whether the findings will be applicable in their context (Brink et al., 2016). The researcher, therefore, provided a detailed description of teachers in the dental programmes at SMU (chapter one, context of the study) and discussed the study findings in relation to reviewed literature. Shenton (2004) posits that provision of thick description will allow the reader to compare the phenomenon with instances that they have experienced in their own settings. The researcher anticipate that reviewed literature and theoretical perspectives discussed in chapter two will also assist the reader to compare and apply the phenomenon in their context.

It is envisaged that the research findings may be beneficial to other undergraduate health professions education institutions in South Africa, as well as the MDB of the HPCSA.

3.2.5.3. Consistency of evidence

Dependability refers to the degree to which the findings of the research remain uniform when produced in the same context (Frambach et al., 2013). Data were collected from research participants until saturation was reached. Saturation is reached in a study when there is no emergence of new themes (Frambach et al., 2013). An iterative process of data analysis was further followed whereby data were continuously re-examined during the identification of codes and themes.

3.2.5.4. Neutrality of evidence

Confirmability refers to “the extent to which the findings of the research are based on the study’s participants and settings instead of researcher’s biases” (Frambach et al., 2013, p. 552). The researcher kept a research diary to reflect on the research process and to document the steps and decisions taken in the research. Since the researcher is also involved in teaching and assessment at SMU, she took great care to ensure that the findings are solely the perceptions of the participants and not her own. The research process and findings were continuously communicated with the research supervisor to limit bias.

Reflexivity means the appreciation in a qualitative study of the power influence that the researcher and research process may have on data generation and data analysis (Mays & Pope, 2000; Ramani & Mann, 2016). The researcher acknowledged that her position as a teacher in the undergraduate dentistry programme at SMU could have potentially influenced the interview process. The researcher mitigated this possible influence by following the interview guide questions and by audio recording all the interviews (Ramani & Mann, 2016).

3.3 ETHICAL CONSIDERATIONS

This study was approved by the Health Research Ethics Committee (HREC) of Stellenbosch University (Project ID: 6680, HREC Reference Number: S18/05/111) and the Sefako Makgatho Health Sciences University Research Ethics Committee (SMUREC) granted the researcher approval to conduct the study at SMU. The study was conducted according to the ethical guidelines and principles of the International Declaration of Helsinki.

Interviews were conducted at a mutually agreed upon location within the university in order to protect the privacy and confidentiality of participants. Participants were allowed to select an appropriate time for interviews that would best suit each of them during working hours. Confidentiality was further maintained by protecting the identity of participants throughout the study process. This was done by assigning a matching code number to each participant so that no data would be linked to individual participants in any of the research reports (Brink et al., 2016).

Participants were reassured that participation was voluntary and that they could withdraw from the study at any stage without any negative consequences. In addition, participants were informed that the results of the study might be used to inform possible recommendations for staff development related to the teaching and assessment of the HPCSA core competencies in the undergraduate dentistry curriculum at SMU. Participants were also informed that they themselves, as well as other teachers and future students, might benefit from potential resulting staff development initiatives.

3.4 CONCLUSION

In this chapter, the methodology, study design, study setting and population of the study were described. Selection of study participants was explained in detail. Data generation instruments and methods, data analysis methods, and measures followed to ensure rigour were also discussed. The next chapter describes the findings of the study in relation to the study objectives and the literature.

Chapter 4: RESULTS

4.1 INTRODUCTION

The previous chapter described the process of data generation and analysis intended to address the following research questions:

Primary Question

- How do dentistry teachers perceive and understand the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?

Secondary Question

- What are the enablers and barriers to the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU?

Data were generated through audio-recorded, individual semi-structured interviews that were conducted by the researcher. The qualitative data analysis provided insight into dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies in the undergraduate dental programme at SMU. The study findings are categorised in accordance with the three main objectives of the study.

Objective 1: To explore and describe the perceptions and understanding of dentistry teachers about the teaching and assessment of the HPCSA core competencies in an undergraduate dental programme at SMU.

Objective 2: To determine the barriers and enablers that undergraduate dentistry teachers at SMU encounter with the teaching and assessment of the HPCSA core competencies in their respective modules.

Objective 3: To make possible recommendations regarding staff development at SMU related to the teaching and assessment of the HPCSA core competencies.

4.2. PARTICIPANT INFORMATION

Ten (n=10) full-time dentistry teachers who teach across the undergraduate dental programme participated in this study. Participants were required to be in possession of a dentistry qualification and have undergraduate teaching experience of more than three years. These two pointers (qualification and teaching experience) were essential for this study as the HPCSA core competencies framework was adapted in South Africa four years ago. It was assumed that

participants who met the above two criteria would be able to provide rich data on their perceptions of the HPCSA core competencies in the context of undergraduate dentistry education.

4.2.1 Overview of Study Participants' Qualifications and Teaching Experience

In terms of dentistry qualifications, most participants (82%; n=9) had a Bachelor's degree in Dental Surgery, and one (9%; n=1) of them had an additional Bachelor's Degree in Dental Therapy. Another participant (9%; n=1) had a Bachelor's Degree in Oral Health.

Just over half of the participants (55%) had no teaching qualifications. One participant (9%) had a Postgraduate Certificate in Health Professions Education and two other participants (18%) had Postgraduate Diplomas in Health Professions Education. Another participant (9%) had completed Bachelor's and Honour's Degrees in Education and was enrolled for a Master's Degree in Health Professions Education at the time of the study. Participants' teaching experience varied between 4 and 18 years.

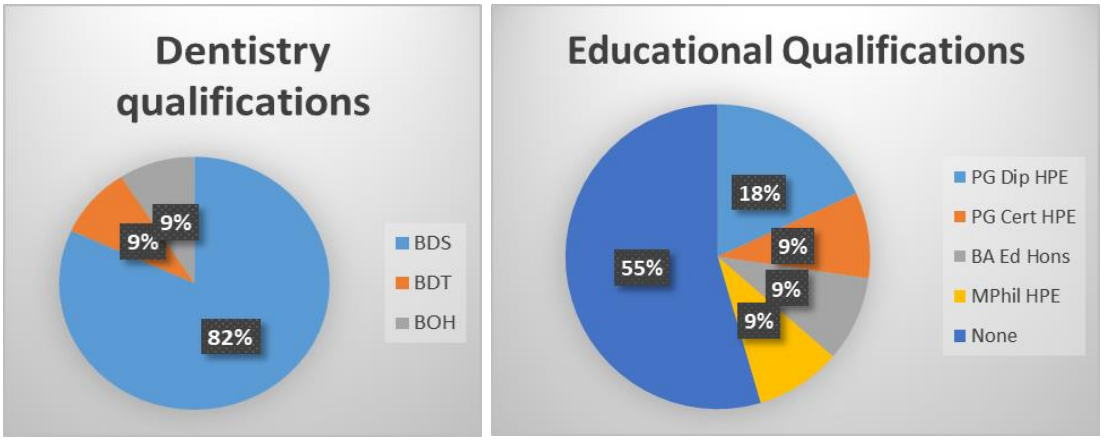

Figure 2: Participants' qualifications

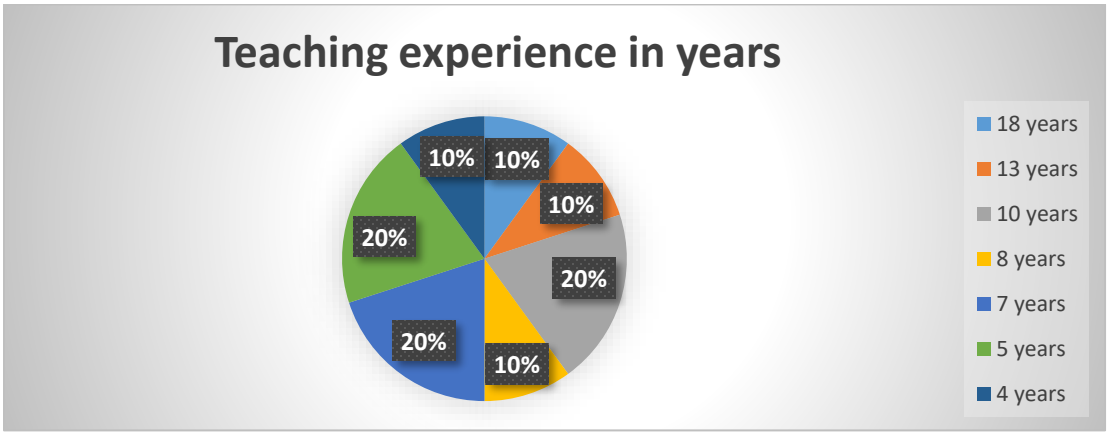

Figure 3: Participants' teaching experience

4.3 DESCRIPTION OF THEMES

Three themes and four sub-themes were identified (Table 4), and these were categorised according to the objectives of this study.

Table 4. Themes and sub-themes

Main Themes	**Sub-themes**
Theme 1: Perceptions and understanding of the teaching and assessment of the HPCSA core competencies in the context of undergraduate dentistry education	Sub-theme 1: Varying conceptions of the HPCSA core competencies
	Sub-theme 2: Perceptions and experiences with regard to the teaching and assessment of the HPCSA core competencies
Theme 2: Barriers and enablers encountered by participants regarding the teaching and assessment of HPCSA core	Sub-theme 1: Perceived barriers
	Sub-theme 2: Perceived enablers
Theme 3: Recommendations for staff development	

Theme 1: Perceptions and understanding of the teaching and assessment of the HPCSA core competencies in the context of undergraduate dentistry education (Objective 1)

This theme describes participants' varying perceptions and understanding of the HPCSA core competencies, and the teaching and assessment thereof, in the context of undergraduate dentistry education at SMU.

Sub-Theme 1: Varying perceptions of the HPCSA core competencies

Some participants indicated that they had a certain degree of background knowledge of the HPCSA core competencies, while others reported that they were unaware of these competencies prior to participating in this study.

Table 5: Varying background knowledge of the HPCSA core competencies

Participant	Response
1	*"What I understand about the HPCSA core competencies is that they have actually been adopted by HPCSA. They have been developed in Canada. The HPCSA published them in 2015".*
4	*"I am hearing about this for the first time now. I didn't even know there was something like that."*

While some participants were able to name all seven competencies, most participants had trouble recalling the individual competencies by name.

Table 6: Varying recollection of individual HPCSA core competencies

Participant	Response
1	*"They are a collaborator, like a graduate is supposed to be in a position to become a collaborator, a manager, a scholar, a lifelong scholar, a communicator, an advocator, a health advocate, a health professional and a health expert."*
5	*"I'm not sure what those competencies are. Maybe if you can just give me a guide... Oh yes, I remember now, yes, to be managers and all that."*
6	*"Then the other thing will be seven, maybe if you can remind me of the others. Health advocacy, communicator, a manager and leader, and collaborator…"*
9	*"Could you just refresh my memory on those core competencies?"*

Some participants seemed uncertain of what the HPCSA core competencies actually encompassed, but expressed their understanding that these competencies went beyond clinical skills.

Table 7: Uncertainty about the HPCSA core competencies

Participant	Response
1	*"…according to me, these competencies are like soft skills which cover up for, the soft skills that our graduate should possess. They are actually, according to me, they are employability skills"*
2	*"…because if you look at the core competencies themselves, they actually talk of competencies beyond just clinical skills..."*
9	"*I mean, and it's so vast. There are so many things there…"*
10	*"…I think it's quite broad... In terms of for instance it leaves some parts open to interpretation as to what is Professional and what is Ethical, and I find those could be more clearly defined"*

A few participants seemed to confuse the HPCSA core competencies with clinical procedures.

Table 8: Misconceptions about HPCSA core competencies

Participant	Response
3	*"I think there are two basically. Its extractions, you must be confident in doing extractions, and normal restorations."*
8	*"The core competencies from the HPCSA, I have realised that they focus more on the clinical competencies of our student. Then when the student leave here, they should be clinically competent in the certain procedures. Ja, so that's my understanding of the core competencies."*

Most participants indicated that they regarded all HPCSA core competencies as equally relevant and important in preparing graduates adequately for practice. In general, participants conveyed the understanding that the university had a responsibility to ensure that dentistry students acquire all of the HPCSA core competencies prior to graduation.

Table 9: Perceived relevance and importance of HPCSA core competencies

Participant	Response
1	*"I think they are all important… so for undergrad, my belief is that we teach undergraduate students what they have to know and what they have to practice out there when they are graduates. So, I cannot say any of these is better than the other."*
2	*"I think they are equally important because look, if you lack one of those, you know, there might arise situations which call for that core competency to come to the fore, and if you lack in that, you will still be compromised, irrespective of you being good on other competencies. So I guess they all are as important."*
3	*"According to me, it's the basics that are expected of every single dentist, that you must be able to do. That is what is required from every university to teach the students, so that when you go outside, they expect you to be able to do those things."*
6	*"My understanding is that before the graduates leave university, they must be having all the seven core competencies that are identified in the Health Professions Council…I think it's a university's responsibility to make sure that every little core competency has been attended to, and they are sure that our students are capable, because from my standpoint, I think they are all important things to know."*

There were, however some participants who felt that not all competencies might necessarily be equally relevant to all of the undergraduate dentistry modules.

Table 10: Uncertainty about relevance of HPCSA core competencies across all modules

Participant	Response
9	*"…it was a little bit tricky to cover all of them. So I found myself using one or two of those competencies more, and not using others at all. So specifically, about a few competencies were applicable to us, and others not… I think most of those would be applicable, but not discipline specific."*
7	*"Yes, so I think at pre-clinical there is only so much. You can't really teach and assess all of those aspects."*

Sub-theme 2: Perceptions and experiences with regard to the teaching and assessment of the HPCSA core competencies

Most of the participants reported that they have not received any formal training on the HPCSA core competencies or the teaching and assessment thereof.

Table 11: Reported lack of training in teaching and assessing the HPCSA core competencies

Participant	Response
7	*"I have never been particularly taught or trained on these core competencies. They have always been a part of everything that we have done. So it just was a part of something bigger, but I can't say I have ever received training on the core competencies."*
9	*"Not particularly to those particular competencies. As I said, when I did my postgrad diploma, there was mention of it, and because it is coming from the HPCSA now, which is our professional body, we have to comply with it. But no formal training on how we should actually go about doing this, no."*
6	*"…but because I am interested in education, I went through the document a bit, so I have an idea of what needs to be in place…How did I find it? I don't know whether it was when I was doing my studies, when I was doing my Masters, just to check what is it that the students are supposed to know…That is how I came across the document."*

In terms of integration of the HPCSA core competencies in the undergraduate dentistry curriculum at SMU, participants seemed to think that it was still mostly a theoretical exercise. They perceived competencies as being added to, and described in, certain curriculum documents, but not actually effected in practice.

Table 12: Participants' perceptions that teaching of the HPCSA core competencies is poorly integrated into the curriculum

Participant	Response
9	*"How well we are implementing it, I don't know. Theoretically, yes, we have. You know, in our study guides….we were asked to update our study guides to include those core competencies in each of our learning objectives, in our course guides, our learner guides."*
6	*"Like I said, they are not in the module as yet. They are just there. It is just a document. If you are interested, you just read through. I just read it. It is not part of the curriculum. It is not there. We are not teaching them that."*
1	*So, what I usually do is I teach them about these competencies in the final year. I teach all the groups, the three groups that we have, BDT, the BOH and the BDS students…When I am not in a study program anymore, I'm going to make sure this is part of the curriculum. I will make sure of that."*

Participants further indicated that, in addition to the lack of proper teaching of the HPCSA core competencies, the assessment thereof is also not yet sufficiently integrated into the curriculum.

Table 13: Participants' perceptions on integration of assessment of the HPCSA core competencies into the curriculum

Participant	Response
2	*"Unfortunately, I don't think we have anything in place to assess, not only advocacy, but in actual fact, all the key competencies, because if you look at our curriculum, those core competencies are meant to be evaluated in the fifth year of study."*
5	*"Let's see, with the module that I teach, I normally teach practice management. So I think maybe we don't have those, the assessments are not yet properly designed to achieve that part."*
10	*"I think not emphasis is given to core competencies. We assess the traditional things that we have always assessed: logic and numeracy… Do we assess punctuality, communication? Are they actually done? I don't think so."*
9	*"So I would say the clinical assessment is the best way in which we assess most of them, and some of them, its skills that we would hope they would acquire when they complete the program, by going through it; but are we assessing it per se? No, not really."*

Participants reported that HPCSA core competencies document is added in learner guides of students, however one participant was uncertain whether students and staff are aware of the document.

Table 14: Perception about inclusion of HPCSA core competency document in current learner guides

Participant	Response
6	*"Whether they were being taken through one by one, I don't know, but they were just printed and given to them. This year, I don't remember whether I asked them whether they got it, because when I mentioned it, they said they don't know…"*
9	*"You put it in your study guide, and you hope at the end of the course the students actually come up with that competency."*

Participants had varying opinions about when the best time would be for students to start learning about the HPCSA core competencies. Most were, however, of the opinion that a spiral approach, where competencies are taught along a developmental continuum, would be most beneficial to students.

Table 15: Participants' opinions on when students should start to learn about the HPCSA core competencies

Participant	Response
1	*"Actually, if we teach them from a young age, like when they come from matric and we start teaching them from the first year, they grow with this behavior, and they grow with these core competencies, so that when they graduate, then they are actually health experts."*
7	*"Well, I would assume from the beginning, and then a sort of spiral approach. I don't think you can say in year three and a half you're going to tell them to be leaders or communicators. So, I think it starts gradually, and it's incorporated as they go on."*
9	*"I would say from first year, all the way through. I mean, and it's so vast."*
10	*"First year I assume is basic sciences, but as soon as they enter the realm of health, as compared to a science. So it needs to be, I think it needs to be introduced, and then reinforced in layering, based on exposure."*
6	*"We must set them as early as third year. Since our program is five years, we start with the theory, that's when they are beginning to see the patients, in third year of their studies. Fourth year, we quickly increase the pace and see if things are in place. Final year, we want to see these things being implemented, because when they are in their final year, they are almost exiting the institution. We need to be completely sure that they know what they are doing."*

When asked about methods/tools that would best enable students to master the HPCSA core competencies, participants highlighted various classroom and clinical teaching methods that they were either using or believed could potentially be employed.

The use of students' presentations as a teaching method in the classroom setting seemed to be a popular choice among participants. In addition, participants mentioned case scenarios, group discussions, and the flipped classroom as potential teaching methods. One participant highlighted Problem Based Learning (PBL) as an ideal method to both teach and assess the communicator role. Although not currently used, a few participants mentioned role play as a potentially suitable method to teach and assess the HPCSA core competencies. One participant pointed out that she did not use a specific teaching or assessment method, but rather varied her teaching and assessment methods.

Table 16: Various teaching tools/methods applicable to the HPCSA core competencies

Participant	**Response**
1	*"I give them a patient scenario, I give them a social scenario in the community, like just give them about the patient, the particular problems."*
7	*"Yes, so instead of just having the classic lecture, so many lectures a week for so long, incorporate a little bit more of blended learning, maybe even a flip classroom."*
2	*"What actually brings these to the fore more pronouncedly, as far as I am concerned, is clinical teaching, is one method, as well as case presentations."*
5	*"You know, maybe if we give them enough chance maybe to have something like PBLs."*
10	*"So role playing, getting students also to watch videos and comment."*

Participants shared diverse perceptions of, and experiences with, the teaching and assessment of individual HPCSA core competencies. Two participants shared differing experiences with teaching the manager/leader core competency in a community-based teaching environment.

Table 17: Differing experiences with teaching the manager/leader core competency

Participant	**Response**
6	*"… when we do the service learning, when we assign one student to be a manager or a leader, you find that they are pushing each other. No one wants to take responsibility to lead, and which is one of the core competencies. If they find it difficult to do that, it means that part of leadership and managers is not stimulated in them. They might have read about it theoretically, but in terms of really implementing it, it's a bit difficult, that is what I have observed."*
8	*"…we have a community outreach programme that we do… we involve the student, and at particular days, there will be one or two who will be at that particular day, will be managing the going out, what we do at the project and stuff. So, I think in that fashion, we are trying to empower them with those skills of management."*

Some participants described how they managed to teach the health advocate core competency role in the university learning environment. One participant felt that it was problematic to teach and assess the health advocate role in the university learning environment and expressed the opinion that this competency would best be learned in a community-based learning environment.

Table 18: Differing opinions about the teaching of the health advocate core competency

Participant	Response
6	"*As a health advocate, that is the link between the health practitioner and the community, but some specialties… are in-house professionals, they are not going to the communities. But I find it difficult to say how they advocate for the patients who are in the community when you are in-house. You are only treating the patients who are coming to the institutions, and then we don't really, we are not really exposed to what the patients are going through and where they are coming from."*
7	*"Health advocate, yes, of course. So, we often explain that understanding, the basic structure and function of a certain tissue in the oral cavity and surrounding area, allows them eventually to ensure the health of that structure. So, we consider ourselves as the building blocks."*
10	*"So in terms of informing your patient as to why you are going to do what you are going to do, but then as a health advocate, clinically, in the clinical setting, they actually get to practice that because they have to follow, so your health advocate, telling them why you need the x-rays, how you're going to protect them, what are the benefits and disadvantages,"*

A few participants indicated that they needed to focus more on integrating the collaborator and leadership competencies into their teaching.

Table 19: Perceptions about the teaching of the collaborator and leadership core competencies

Participant	Response
5	*"Then collaborator, hmm, I feel we are still lacking on that as well."*
10	*"…but if I had to think about what we actively, in my practice, speaking to you, I realise that I am lacking on collaborator, and leadership."*

One participant indicated that she is comfortable with, and enjoys, teaching and assessing all of the HPCSA core competencies. She attributed this to the fact that, instead of a clinical focus, her module focused on the social sciences.

Table 20: Self-reported confidence in teaching and assessing all seven HPCSA core competencies

Participant	Response
1	*"I've got a slot in my programme for all of them where I can teach them these competencies, and I am able to assess them. So, these competencies, I do not necessarily put them as a module, but I apply them in my, fortunately again, the reason why I say the issues that are helping me as well is the fact that the course that I am teaching my students is a social science. It's not a clinical science per se, it's a social science. So that is where these competencies fall into place so well, and then I can be able to teach them, and nobody is disturbing me."*

Theme 2: Barriers and enablers encountered by participants regarding the teaching and assessment of HPCSA core competencies (Objective 2)

This theme addressed the various barriers and enablers encountered by participants regarding the teaching and assessment of the HPCSA core competencies

Sub-theme 2.1: Perceived barriers

Participants mentioned factors associated with general curriculum implementation and evaluation processes, inadequate support structures, and poor communication between curriculum developers and staff as major barriers to the effective implementation of the HPCSA core competencies.

Table 21: Perceived barriers in the form of curriculum implementation, inadequate support structures and poor communication

Participant	Response
2	*"I think the problem with this institution is that most of these exercises like the curriculum review, curriculum update, curriculum development, it is looked at as an elitist kind of activity, whereby a few individuals, based on what, I don't know, are actually meant to participate in, and because of that, there is actually no buy-in from the rest of the staff… because even from the very people who develop the curriculum, there isn't any monitoring of any sort to see if what they have proposed, what is being implemented is actually being followed."*
1	*"The only hindrance that I have about teaching the competencies and assessing them is the fact that it's not supported in my department."*
6	*"… they will just submit this document and keep quiet about it. How are they sure that we are imparting this knowledge to the students as it is now? The next thing that they are likely going to do is to come and amend maybe the communication, not knowing whether it has worked or it did not work. So, that is my challenge."*

In addition, participants considered inadequate training on the HPCSA core competencies and the lack of resources, such as time and a manageable workload, as challenges that hindered them to effectively teach and assess the HPCSA core competencies.

Table 22: Perceived barriers in the form of inadequate and lack of resources

Participant	Response
8	*"I think lack of experience in some of these roles that we are focusing maybe on a few, not incorporating all of them."*
7	*"Well, firstly you need to spend a lot of time developing it if you want it to be done properly. So, you need to have the time to do it. You need to have the resources to do it."*
10	"*The workload, the excessive workload. So, one of the things is workload."*

One participant felt that students' attitudes might also negatively affect the teaching and assessment of the HPCSA core competencies.

Table 23: Perceived barriers in the form of negative student attitudes

Participant	Responses
3	*"I think it's the receptiveness of the students as well. Some of the students have got this mentality, they just want the title… If you don't have the patience for it, then you can see that they will not be receptive if you want to teach them how to be a proper dentist, all-round dentist."*

Most participants seemed to view themselves as clinicians, rather than teachers, which influenced their confidence in teaching and assessing these competencies.

Table 24: Perceived barriers in the form of identity issues

Participant	Responses
9	*"So I would say the biggest problem is juggling your two identities, as a clinician and as an academic or a teacher."*
5	*"We actually are dentists who are teaching, so we didn't go through the teaching course."*

Sub-theme 2.2: Perceived enablers

Some participants indicated an additional qualification in education as a possible enabler to the teaching and assessment of the HPCSA core competencies. One participant mentioned receiving feedback from curriculum evaluators as an enabler that would help her to improve her teaching and assessment of the HPCSA core competencies in the undergraduate dentistry curriculum.

Table 25: Perceived enablers to teaching and assessing the HPCSA core competencies

Participant	**Response**
5	*"… unless if maybe you've got a background somewhere, maybe you did your education, then you know what is expected of you, or how you are supposed to do this thing."*
9	*"…if you have someone that has a qualification in education, they may be able to come up with ideas. They may have the literature to back them up. You know, what they learnt, it will be easier to facilitate or to incorporate these competencies into our curriculum.*"
7	*"So perhaps an evaluation of that would be great, for someone to tell you well, you could do better on a certain aspect of it."*

Theme 3: Participants' recommendations (Objective 3)

Participants suggested that all departments should be involved in the teaching and assessment of HPCSA core competencies. Some participants further suggested that a single integrated module should be used to teach and assess these competencies across the undergraduate dentistry programme.

Table 26: Recommendations on effective strategies for teaching and assessing the HPCSA core competencies

Participant	Response
6	*"The question maybe that we might ask is, who is supposed to offer it? Which department is supposed to offer this? I think this needs to be emphasised across the bar, because we are coming across the board, all the departments must make sure that students are competent… I think all the departments must make sure that this document is adhered to and is in use."* *"The other suggestion, I think this must be a module on its own, the core competencies. It must just stand there on its own, they deliver it, they assess them on it."*
10	*"I think that it should be as an integrated, and examined in all individual modules. The students should have a standalone module."*

All participants were in agreement about the importance of staff development initiatives to adequately prepare dentistry teachers to teach and assess the HPCSA core competencies in the undergraduate dentistry curriculum at SMU. One participant indicated her plans for staff development at the SOHS regarding the teaching and assessment of HPCSA core competencies.

Table 27: Participants' motivation for staff development recommendation

Participant	Response
1	*"Yes, definitely, definitely. I and my colleague are going to conduct staff development projects in this school. This is going to be part of them, because we are going to make sure that all the staff members that are teaching our students have to teach them these skills."*
2	*"Yes, what I think should happen is maybe twice, three times in a year, maybe beginning of the year, not only for newly appointed staff, but for almost everybody, at least twice or thrice in a year, these should be revisited and they should be inculcated in all staff members so that it actually becomes sort of second nature to the people who are actually supposed to be ensuring that the students are taught, and the students are assessed."*
5	*"Maybe if we get regular teaching courses, you know, just to make sure that we are aware of the things and how to do, how to go about to achieve them, it will make a big difference, so that we are on the same page."*
6	*"A suggestion is that when the curriculum review is in place, this document is not supposed to be by the way. It must form part of their curriculum, and have the measures in place, how we are going to assess, to make sure that everything that is here is being implemented."*
7	*"…I am sure there would be a need, certainly. I'm sure a lot of staff members would be interested in being trained on that, so that we know that we are actually doing it properly [chuckles], because we sometimes think, or we assume that we are doing it and doing it correctly, and hope that we are."*

Another participant added that staff development planning should take into consideration the level of experience of teachers and adapt training accordingly.

Table 28: Recommendation on adapting staff development to activities on participants' levels of teaching experience

Participant	Response
10	*"I think again, it should be pitched at your level of, almost the number of clinical years, and I will tell you why and I don't mean to sound disrespectful. The generics apply to everybody, but for instance for somebody who has been qualified and practicing for 20 years, do you want, for me, do I want to give up half an hour or one hour to sit with somebody in ComServ, who has just come out of ComService, to go over the basics?"*

Most participants perceived workshops as an effective means to promote staff development.

Table 29: Participants' preferences for staff development initiatives

Participant	Response
3	*"Well, I would like to have a workshop"*
8	*"If we can have some workshops where people come and say this is what I am doing, this component on this role, this is how, you know, just people coming and sharing in a workshop or in-service training, then we talk about all those roles… so I believe that yes, staff development in this particular area will be really beneficial for all staff members, even those that, I am attending courses in teaching, but they haven't really addressed this component."*
9	*"It would be nice if we could be workshopped on it. I mean, this thing has been around for a while, but we have never really been workshopped on it. So perhaps some sort of a workshop from the HPCSA."*

4.4 SYNTHESIS

The study findings were reported in this chapter and summarised as follows:

1. Study participants have not received formal training on teaching and assessment of HPCSA core competencies. Some participants lack knowledge of the HPCSA core competencies and seemed to confuse the HPCSA core competencies with clinical procedures. There is shared understanding that these competencies go beyond the mere acquisition of clinical skills.
2. There is a sound agreement among study participants about the importance and relevance of teaching and assessing the HPCSA core competencies. Some HPCSA core competencies are perceived to lack relevance in certain dentistry modules.
3. Study participants perceived and experienced teaching and assessment of health advocate; manager and leader; collaborator core competencies in various ways.
4. HPCSA core competency document is included in the learner guides of students.
5. Study participants encounter challenges that prevent them to teach and assess HPCSA core competencies. There is poor support structure and communication between curriculum developers and participants. Lack of resources and identity issues are also perceived as barriers to teaching and assessing the HPCSA core competencies.
6. Study participants held a belief that additional qualification in health professions education could help them to teach and assess the HPCSA core competencies. Feedback from curriculum evaluators is perceived as valuable to improve teaching and assessing the HPCSA core competencies in undergraduate dental programmes.
7. It is important that all departments participating in the implementation of dentistry curricula are involved in the teaching and assessment of HPCSA core competencies. There is a strong support for staff development initiatives to adequately prepare dentistry teachers to teach and assess the HPCSA core competencies in the undergraduate dentistry curriculum.

4.5 CONCLUSION

It became evident that participants had varying perceptions and understanding of the teaching and assessment of the HPCSA core competencies, and experienced many challenges in teaching and assessing these competencies. All participants agreed that they would benefit greatly from staff development initiatives. The following chapter will discuss the study findings in relation to the study context as well as the literature.

Chapter 5: DISCUSSION

5.1 INTRODUCTION

This study explored the perceptions and understanding of dentistry teachers regarding the teaching and assessment of the HPCSA core competencies in an undergraduate dentistry curriculum at the SOHS at SMU. Preparing a team of healthcare leaders who will address the healthcare needs of individual patients, the family, the community, and the population is central to the vision and mission of SMU (SMU, 2014).

The findings of this study seem to suggest that participants have varying perceptions about the teaching and assessment of the HPCSA core competencies, and may encounter a number of barriers related to the teaching and assessment of these competencies in the context of undergraduate dentistry education. This chapter will discuss the study findings in relation to the study context, as well as the literature, and will convey participants' recommendations for staff development initiatives.

5.2 Perceptions and understanding of the teaching and assessment of the HPCSA core competencies in the context of undergraduate dentistry education (Objective 1)

A fundamental goal for health professions education institutions, globally, is to optimally train and prepare students to be competent and independent healthcare providers at the end of the programme (Long, 2000; Dijkstra, Pols, Remmelts & Brand, 2015). It is clear from the findings that most participants acknowledged this fundamental goal and understood the relevance of incorporating all seven HPCSA core competencies into the undergraduate dentistry curriculum at SMU.

As discussed in chapter two, Ten Cate et al. (2010) argue that since all seven CanMEDS core competencies are interconnected, they should be collectively taught and assessed. Some participants in this study, however, felt that not all seven HPCSA core competencies were equally relevant to teach and assess in all dentistry modules.

Although a few participants demonstrated some degree of background understanding of the HPCSA core competencies, many of them were unable to recall all seven HPCSA core competencies by name. It is also clear from the findings that participants had varying conceptions about what the HPCSA core competencies entail. Some participants shared the understanding that these competencies go beyond the mere acquisition of clinical skills, while others seemed to confuse the HPCSA core competencies with clinical procedures.

The above-mentioned misconceptions, the inability of many participants to recall all seven core competencies, and the fact that participants seemed to be aware of their development areas, can be viewed as essential to learning about a new phenomenon. Consciousness is crucial in learning as it shifts an individual from the level of unconscious incompetence (unaware that they do not know) to the level of conscious competence whereby one could independently apply new knowledge learned (Hendricson & Kleffner, 1998; Carraccio, Benson, Nixon & Derstine, 2008; Adams, 2011).

None of the study participants have received formal training on the teaching and assessment of the HPCSA core competencies, and it was determined that these competencies have not yet been integrated into the undergraduate dentistry curriculum at SMU. However, despite these facts, a number of dentistry teachers have started to teach the core competencies in their modules. The assessment of these core competencies is not yet integrated into the curriculum. As discussed in chapter two, it is crucial that teachers understand the importance of aligning teaching activities with assessments, since a deep approach to learning can only be achieved when the teachers are explicit about what students should learn and then align the learning outcomes with teaching-learning activities and assessment activities (Biggs, 2012).

Only one participant in this study seemed comfortable to teach and assess all the HPCSA core competencies. As stated in chapter two, some CanMEDS core competencies such as health advocate, professional and manager were reported to be difficult to teach and assess (Stafford et al., 2010; Whitehead et al., 2011). Furthermore, literature shows that healthcare professionals exit the programme inadequately prepared in some specific non-clinical competencies such as the manager core competency (Dijkstra et al., 2015). A few participants in this study indicated that the manager and professional core competencies were problematic to teach and assess. Although findings show that participants manage to teach health advocate competency role, one participant acknowledged that it was problematic to teach and assess this competency in the university setting. Community-based learning environment was suggested as ideal for teaching and assessing this competency, this could be due to the fact that this environment is experienced as workplace-based platform.

Additionally, findings show that study participants identified their shortcomings regarding integration of collaborator and leadership competencies in their teaching. This finding seems to correlate with another South African study that explored the perceptions of physiotherapy students and lecturers regarding the collaborator competency, which showed that both the

students and the lecturers lacked comprehensive understanding of this competency (Manillal & Rowe, 2016).

As discussed in chapter two, there is paucity of literature regarding the teaching methods and incorporation of the seven CanMEDS core competencies into curriculum (Whitehead et al., 2011). Moreover, Jefferies et al. (2011) argue that the ideal teaching and assessment methods to teach and assess the CanMEDS core competencies are not yet known, despite the directive to teach and assess these competencies. Participants in the context of this study described various methods that could potentially be employed in the teaching and assessment of the core competencies.

It was clear from the findings that dentistry students were in possession of the HPCSA core competency document and that these competencies were occasionally included in the study guides of students. However, participants were uncertain whether students were familiar with the competencies, and whether these competencies were actually taught and assessed across the curriculum. Some of the participants also seemed concerned about the receptiveness of the students to learn about the HPCSA core competencies. This perceived negative attitude from dentistry students at SMU could be due to the fact that the content and the rationale for the HPCSA core competency document had not been explained to them. Tucker, Erfud and Kennedy (2017) suggest that people become receptive when they are informed of the benefits of competency-based education.

As discussed in chapter two, individuals can share their own perceptions through reflection and subsequently improve their common and individual learning (Kaufman & Mann, 2014). The researcher is of the opinion that the interview questions assisted study participants to reflect about their teaching and assessment practices, subsequently helping them to identify their areas of growth.

5.3 Barriers and enablers encountered by participants regarding the teaching and assessment of HPCSA core competencies (Objective 2)

The findings further indicate that participants encountered many challenges with the teaching and assessment of the HPCSA core competencies at SMU. Major barriers included factors associated with curriculum implementation and evaluation processes, inadequate support structures as well as poor communication between curriculum developers and staff.

In addition, findings reveal that participants in this study considered inadequate training on the HPCSA core competencies and the lack of resources, such as time and a manageable workload,

as major challenges in integrating the teaching and assessment of the HPCSA core competencies in their respective modules. These barriers echo the findings reported by Whitehead et al. (2011) who through review of studies done on teaching and assessment, found that lack of: interest, time, experience and curriculum were viewed as barriers to teaching and assessing CanMEDS core competencies

Findings show that there is an ongoing curriculum review process taking place at SMU. However, not all stakeholders are being involved in the implementation of the HPCSA core competencies into the curriculum. Irby and Wilkerson (2003) confirm that curriculum review is a constant feature at all health professions education institutions; therefore, it is important to continuously develop clinicians as teachers. It was evident that most participants are not involved in the implementation process as some were unaware or uncertain about the implementation of HPCSA core competencies at SMU. Additionally, these findings seem to suggest an insufficient evaluation processes to determine the success or failure of the implementation process. Participants indicated that they valued the importance of an evaluation process where they could be given feedback about their progress. They were of the opinion that feedback would enable them to improve their skills to teach and assess the HPCSA core competencies.

There also appear**s** to be a lack of communication between the curriculum developers and dentistry teachers regarding the implementation of HPCSA core competencies in curriculum. Participants in this study, felt that better communication could act as a channel to enable them to share their understandings, challenges and ideas with a view to improve the implementation of HPCSA core competencies. It is important to involve staff by paying attention to their concerns, opinions and goals, subsequently fostering active participation and commitment in the training process (Bligh 2005).

Participants in this study reported a lack of support, time constraints and excessive workload as barriers that prevented them from teaching and assessing the HPCSA core competencies. Although participants are keen to teach and assess these core competencies, some felt that their departments do not offer them the support they need. They seemed to feel overwhelmed by the excessive workload and difficulty to balance clinical, research and teaching responsibilities, and felt that these issues negatively impacted on their ability to teach and assess the HPCSA core competencies. They also experienced difficulties in finding the time to adequately plan and prepare the teaching and assessment of the HPCSA core competencies in their modules and disciplines.

From the findings, it is evident that participants seemed to realise that their training as dentists did not prepare them to be teachers. It is well known that the clinical training of healthcare professionals does not prepare them to become teachers in the health professions as well (Hedge, 2013; Ross, 2016; Steinert et al., 2016). Therefore, they feel more confident at performing clinical procedures and providing good clinical care to their patients than teaching students.

In terms of enablers, participants shared the opinion that an additional qualification in health professions education would improve their skills in the teaching and assessment of HPCSA core competencies, however participants were not explicit about this perception. One participant indicated that receiving feedback from curriculum evaluators would be beneficial for her teaching and assessment skills of HPCSA core competencies.

It is evident from the findings that participants are keen to receive training about the teaching and assessment of HPCSA core competencies. This confirms the assumption discussed in chapter two, that adult learners value learning that is relevant and meaningful to their real life encounters (Knowles, 1988; Kaufman & Mann, 2014). Teachers, just like any other learners, are expected to improve their teaching competencies through reflection and professional development (Walsh et al., 2017). It is occasionally neglected that teachers are also learners (Bligh, 2005). Therefore, in this context, dentistry teachers are considered life-long learners. As discussed in chapter two, learning is an ongoing active process whereby learners construct knowledge and understanding on the foundations of what they already know (Vygotsky, 1997).

5.4 Participants' recommendations (Objective 3)

The development of teachers is essential in order to effectively deliver CBME (Dath et al., 2010). Effective staff development will help the teachers to improve their teaching performances and the learning outcomes for the students (Bligh, 2005). The resulting improvements from staff development include and are not limited to the development of new teaching skills or assessment techniques which may be directed towards improving clinical care through better teaching; improved methods of curriculum implementation and improved approaches to integrating the teaching role with the role of a health care provider (Bligh, 2005).

Motivating teachers and changing their attitudes about staff development is reported as a challenge in the implementation of staff development (Hedge, 2013). However, interestingly, participants in this study were all in agreement on the importance of staff development to adequately prepare them to teach and assess the HPCSA core competencies. As discussed in

chapter two, that staff development that explains the intrinsic CanMEDS core competencies is crucial in helping the teachers to understand the teaching and assessment of the CanMEDS core competencies (Puddester et al., 2015).

In light of the findings in chapter two, staff development initiatives such as workshops and presentations-on-demand seem to be crucial in the adoption and implementation of CBME and CanMEDS (Frank & Danoff, 2007) as a means to orientate teachers and develop them about the teaching and assessment of the phenomena (Dath et al., 2010). It is evident in this study that participants perceived workshops as an effective means to promote staff development in teaching and assessment of the HPCSA core competencies.

5.5 CONCLUSION

This chapter focused on the detailed description of the study findings in relation to literature and theoretical perspectives. Health professions education institutions, globally, aim to optimally train and prepare students to be competent and independent healthcare providers at the end of the programme (Long, 2000; Dijkstra et al., 2015). There is evidence that the students at SMU are in possession of the HPCSA core competencies document, however, they may not have received any teaching and assessment on these core competencies. The findings indicate varying perceived barriers that prevented their teachers to effectively teach and assess these core competencies. It is clear from the findings that participants are keen to improve their teaching and assessment skills through staff development initiatives. The next chapter will discuss conclusions to the study, the limitations of the study, and the recommendations.

Chapter 6: CONCLUSION

6.1 INTRODUCTION

This study aimed to explore the perceptions and understanding of dentistry teachers regarding the teaching and assessment of the HPCSA core competencies at SMU. One objective was to determine the need for staff development initiatives on the teaching and assessment of these competencies to empower teachers optimally to prepare undergraduate dental students to meet the healthcare needs of their patients and the communities they will be serving.

Teachers in the health professions play an important role in ensuring that students are adequately prepared to respond to the changing healthcare needs of their patients and the communities that they serve. It is, therefore, crucial that teachers are competent in the teaching and assessment of essential core competencies (Dath et al., 2010).

6.2 LIMITATIONS

This study had few limitations. As a teacher in the programme, the researcher could have been tempted to lead the discussion and to give her own views (Boyce & Neale, 2006). This limitation was addressed by adhering to the interview guide and by audio recording the interviews. Since the researcher is known to the participants, some participants may have felt obliged to participate in the interviews. The researcher mitigated this limitation by being clear to the participants from the onset that participation was voluntary and that they were not obliged to participate.

Another limitation is that the study was only focused on the dentistry programme and did not explore the perceptions of the teachers in other undergraduate health sciences programmes at SMU, nor the perceptions of undergraduate dentistry teachers at other institutions in South Africa. It also did not explore the perceptions of dentistry students at SMU about the teaching and assessment of HPCSA core competencies, since the students were in possession of the HPCSA core competency framework document. This posed a threat to the transferability of the research findings in different locations (Frambach et al., 2013). The researcher addressed this limitation by providing detailed descriptions of the study findings.

6.3 RECOMMENDATIONS

In light of the findings of this study, the following recommendations are proposed:

- The HPCSA core competency framework document should be made available to all undergraduate dentistry students and teachers at SMU.

- Curriculum developers and dentistry teachers should, therefore, ensure that the students are taught and assessed on these core competencies.
- Improving the line of communication between the curriculum developers and dentistry teachers at SMU is one of the ways that might help the curriculum developers to inform staff about changes required in curricula, to identify the challenges (support, time, work-load) encountered by dentistry teachers with the implementation process of the HPCSA core competencies, and to effectively evaluate the implementation process.
- Regular staff development offerings at SMU, including workshops that focus on CBME and other aspects related to health professions education might enlighten dentistry teachers about the new teaching and assessment techniques and empower them to effectively integrate the teaching and assessment of HPCSA core competencies across the undergraduate dentistry curriculum at SMU.

6.3.1 Implications for Further Research

In light of the findings in this study and the fact that the adoption of the CanMEDS core competency framework in the South African context is still in the early years, further research on the experiences of curriculum developers regarding the incorporation of the HPCSA core competencies into curriculum is required. A study on the experiences and perceptions of dentistry teachers participating in staff development initiatives related to the teaching and assessment of the HPCSA core competencies may also be useful.

6.4 CONCLUSION

This study explored dentistry teachers' perceptions and understanding of the teaching and assessment of the HPCSA core competencies in an undergraduate dentistry curriculum in the South African context. It is evident that, although study participants perceive the teaching and assessment of the HPCSA core competencies as relevant and important, most of them feel unprepared to teach and assess these competencies. Various challenges experienced by participants in teaching and assessing the HPCSA core competencies were brought to the fore. This study highlighted the need for faculty development programmes focused on equipping dentistry teachers with the knowledge and skills to teach and assess all seven of the HPCSA core competencies.

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APPENDICES

APPENDIX A: Participant Information leaflet and Consent Form

TITLE OF THE RESEARCH PROJECT: Exploring dentistry teachers' perceptions and understanding of the teaching and assessment of the Health Professions Council of South Africa Core Competencies in an undergraduate dentistry curriculum at a South African University

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CONTACT NUMBER: 021 938 9447

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the investigator any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and

how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study is performed as a requirement for the degree of Master of Philosophy (MPhil) in Health Professions Education, offered by the Centre for Health Professions Education at the Faculty of Medicine and Health Sciences of Stellenbosch University, for which the researcher is enrolled. This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this study all about?

- This study aims to explore the perceptions and understanding of dentistry teachers with regards to the teaching and assessment of the Health Professions Council of South Africa (HPCSA) core competencies in the undergraduate dentistry curriculum at Sefako Makgatho Health Sciences University (SMU).
- It is envisaged that the findings will be used to make recommendations with regards to possible staff development in order to facilitate improved teaching and assessment of the HPCSA core competencies in the undergraduate dentistry curriculum at SMU.

Where will the study be conducted; are there other sites; what is the total number of participants to be recruited for this study?

- The study will be conducted at the School of Oral Health Sciences at SMU. It is envisaged that approximately eight (8) dentistry teachers will be recruited to participate in the study
- You will be invited to participate in an individual interview, where the researcher will ask you to share your experiences and perceptions of the teaching and assessment of the HPCSA core competencies in the undergraduate dentistry curriculum at SMU.
- The interview will take place on a date and time that suits you. The interview will also take place at a venue that is convenient for you and that would allow for the necessary privacy during the interview.
- The researcher will conduct all the interviews herself.

- Interviews will be approximately 60 minutes long and will be audio recorded. The audio recordings will be transcribed and you will be given a copy of the transcription, which you may check for accuracy, and may comment if you wish to do so.
- During the interview, the researcher may make some notes to assist her with remembering important details of the interview, or to note questions which she may wish to explore further during the interview.

Why have you been invited to participate?

- You have been invited to participate in this study since you are one of the lecturers teaching on the undergraduate dentistry curriculum at SMU. Your participation will provide insight on how teachers in this curriculum perceive the teaching and assessment of the HPCSA core competencies. This information may also help to determine whether there is a need for staff development at SMU on the teaching and assessment of these competencies.

What will your responsibilities be?

- Your participation is voluntary. After informed consent, you will be required to partake in face to face interview with the researcher. The interview will be audio recorded and will last approximately 60 minutes.
- Your responsibility will be to respond to a series of questions drawing on your own experiences and perceptions

Will you benefit from taking part in this research?

- It is envisaged that the results of the study may be used to inform possible recommendations for staff development related to the teaching and assessment of the HPCSA core competencies in the undergraduate dentistry curriculum at SMU. Both you as a teacher, and future students, may benefit from potential resulting staff development initiatives.

Are there any risks involved in your taking part in this research?

- The study envisages no physical or emotional harm to participants.

If you do not agree to take part, what alternatives do you have?

- Participation in the study is voluntary. Participants may withdraw from the study at any stage without any consequences

Who will have access to your data?

- Only the investigator and her research supervisors will have access to the transcripts of the participants

Will you be paid to take part in this study and are there any costs involved?

No participants will not be paid to participate in this study. There will also be no cost involved for you if you do partake.

Is there anything else that you should know or do?

- You can contact the researcher directly at **0820928003** if you have any further queries regarding this information leaflet or about your participation in this study
- You can contact the Health Research Ethics Committee at Stellenbosch University on **021938 9207** if you have any concerns or complaints that have not been adequately addressed by researcher
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I ……..……. agree to take part in a research study entitled Exploring dentistry teachers' perceptions and understanding of the teaching and assessment of the Health Professions Council of South Africa core competencies in an undergraduate dentistry curriculum at a South African University

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2018.

..... ……

Signature of participant **Signature of witness**

Declaration by investigator

I *(name)* ……..……declare that:

- I explained the information in this document to ……..
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did not use an interpreter.

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2018.

....

Signature of investigator Signature of witness

APPENDIX B: Data Generation Instrument: Interview Guide

Semi-structured Interview Guide

The researcher will ask the participants basic background data at the beginning of the interview in order to build up trust with the participants (Jacob and Furgerson, 2012).

Background: Thank you so much for making time to participate in this study. To begin with can you introduce yourself by mentioning your qualifications and your years of experience as a teacher in dentistry?

Questions

1. Please tell me a little bit about your understanding of the HPCSA core competencies
   a) Which role(s) of the HPCSA core competencies do you feel are most relevant to undergraduate dentistry training?
   b) Why?

2. Can you please share your experiences with regards to the teaching and assessment of the HPCSA core competencies in your module?
   a) Which of the HPCSA core competencies do you emphasize most when teaching your specific module(s)
   b) Why?
   c) Which strategies/tools do you find most effective for teaching and/or assessing the HPCSA core competencies in your specific module?
   d) What do you feel hinders or helps you to teach and/or assess the HPCSA core competencies in your module?

3. What type of training have you received with regards to teaching and/or assessing the HPCSA core competencies?
   a) Do you have any suggestions for staff development on the teaching and/or assessment of the HPCSA core competencies at SMU?

4. **Conclusion**: Thank you so much for your time and your comments, the information you provided has been beneficial for my study.

APPENDIX C: Summary Table of Thematic Analysis

Codes	Sub-themes	Main Themes
Background knowledge Mentioning the HPCSA core competencies Misperceptions of the HPCSA core competencies Ranking relevance	Varying conceptions of the HPCSA core competencies	Perceptions and understanding of the teaching and assessment of the HPCSA core competencies in the context of undergraduate dentistry education
Formal training Commence teaching and assessment Integration across continuum Assessment Identified deficiencies Confidence	Perceptions and experiences with regard to the teaching and assessment of the HPCSA core competencies	
Curriculum implementation and evaluation Inadequate support Poor communication Lack of training Resources	Perceived barriers	Barriers and enablers encountered by participants regarding the teaching and assessment of HPCSA core
Qualification in education Feedback from curriculum evaluators	Perceived enablers	
Compulsory departmental involvement Single module Workshops	Participant recommendations	Recommendations for staff development

APPENDIX D: SMUREC Approval

SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY

Research & Postgraduate Studies Directorate
Sefako Makgatho University Research Ethics Committee (SMUREC)

Ms K Masike
Sefako Makgatho Health Sciences University (SMU)
School of Oral Health Sciences University (SOHS)
Dental Building, Room N442

Dear Ms K Masike

RE: DR K MASIKE – REQUEST FOR PERMISSION TO CONDUCT STUDY AT SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (SMU)

SMUREC **NOTED** your email dated 1 June 2018 requesting permission to conduct your study at SMU.

SMUREC **NOTED** that you have received ethical approval for your proposal from the University of Stellenbosch Research Ethics Committee as follows:

Study Title:	Exploring dentistry teachers' perceptions and understanding of the teaching and assessment of the Health Professions Council of South Africa core competencies in an undergraduate dentistry curriculum at a South African University
Researcher:	Dr K Masike
Supervisor:	Ms Mariette Volschenk
University:	University of Stellenbosch, Centre for Health Professions Education, Faculty of Medicine and Health Sciences
Research Type:	Master of Philosophy in Health Professions Education
Ethical Clearance Number:	S18/05/111
Approval letter date:	08 June 2018

SMUREC **NOTED** the ethics approval and **GRANTED** reciprocal clearance to allow the researcher access to obtain data for the abovementioned study through the use of questionnaires completed by dentistry teachers involved in the undergraduate curriculum.

We are happy to offer you an opportunity to conduct your study in our institution.

Yours Sincerely,

CHAIRPERSON SMUREC
21 June 2018

SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY
SMU Research Ethics Committee
Chairperson
Date: 21/06/2018

Molotlegi Street, Ga-Rankuwa
Pretoria, Gauteng
PO Box 163, Medunsa, 0204
www.smu.ac.za

APPENDIX E: HREC Approval

UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

Health Research Ethics Committee (HREC)

Approval Notice

New Application

08/06/2018

Project ID :6680

HREC Reference #: S18/05/111

Title: PERCEPTIONS OF SMU TEACHERS ABOUT THE HPCSA CORE COMPETENCIES

Dear Dr KEBIDITSWE MASIKE,

The **New Application** received on 30/05/2018 13:26 was reviewed by members of **Health Research Ethics Committee 2 (HREC2)** via **expedited** review procedures on 08/06/2018 and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: **This project has approval for 12 months from the date of this letter.**

Please remember to use your **Project ID [6680]** on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review

Please note you can submit your progress report through the online ethics application process, available at: Links Application Form Direct Link and the application should be submitted to the HREC before the year has expired. Please see *Forms and Instructions* on our HREC website (www.sun.ac.za/healthresearchethics) for guidance on how to submit a progress report.

The HREC will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility, permission must still be obtained from the relevant authorities (Western Cape Departement of Health and/or City Health) to conduct the research as stated in the protocol. Please consult the Western Cape Government website for access to the online Health Research Approval Process, see: https://www.westerncape.gov.za/general-publication/health-research-approval-process. Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and instructions, please visit: Forms and Instructions on our HREC website https://applyethics.sun.ac.za/ProjectView/Index/6680

If you have any questions or need further assistance, please contact the HREC office at 021 938 9677.

Yours sincerely,

HREC Coordinator,

Health Research Ethics Committee 2 (HREC2).

National Health Research Ethics Council (NHREC) Registration Number:

REC-130408-012 (HREC1)·REC-230208-010 (HREC2)

Federal Wide Assurance Number: 00001372

Office of Human Research Protections (OHRP) Institutional Review Board (IRB) Number: IRB0005240 (HREC1)·IRB0005239 (HREC2)

The Health Research Ethics Committee (HREC) complies with the SA National Health Act No. 61 of 2003 as it pertains to health research. The HREC abides by the ethical norms and principles for research, established by the World Medical Association (2013). Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects;the South African Department of Health (2006). Guidelines for Good Practice in the Conduct of Clinical Trials with Human Participants in South Africa (2nd edition); as well as the Department of Health (2015). Ethics in Health Research: Principles, Processes and Structures (2nd edition).

The Health Research Ethics Committee reviews research involving human subjects conducted or supported by the Department of Health and Human Services, or other federal departments or agencies that apply the Federal Policy for the Protection of Human Subjects to such research (United States Code of Federal Regulations Title 45 Part 46); and/or clinical investigations regulated by the Food and Drug Administration (FDA) of the Department of Health and Human Services.